HU 300

Hammer Union Pressure Transmitter

special application
petrochemical industry / offshore

accuracy according to IEC 60770:
0.5 % FSO

Nominal pressure

from 0 ... 5 000 psi up to 0 ... 15 000 psi

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 5 V
4-wire: 3 mV/V
others on request

Product characteristics

- extreme robust and stable
- vibration / shock

Optional versions

- IS-version zone 0 / 1
  (only for 4 … 20 mA / 2-wire)
- different output signals

Versions on request

- pressure port in Inconel®
- electrical connection Glenair (4-pin)
- mechanical connection
  WECO®2" (2002/2202)

The pressure transmitter HU 300 has been especially developed for extreme operating conditions in the petrochemical industry (on- and offshore sites). A high degree of reliability and accuracy is the precondition for a perfect function during cementing and tightening processes (annulus) on wellbores.

A one-piece pressure port, a high-quality pressure sensor and precise machining and assembly techniques ensure a small drifting and a high long-term stability. A very high resistance against vibration, shock and pressure peaks without any influence on the measurement characteristics is guaranteed. Due to the extreme environmental conditions on-site, it is important to offer solutions to different requirements, as f. ex. an intrinsic-safe version (zone 0), an electrical connection with IP 68 or special steel materials.

Preferred areas of use are

cementing wellbores
hydraulic fracturing
intensifying wellbores

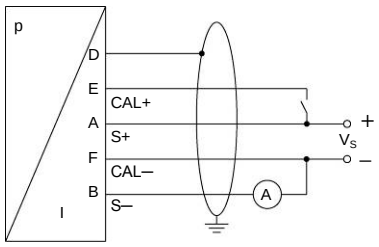
Pressure ranges					
Nominal pressure	[psi]	5 000	6 000	10 000	15 000
Permissible overpressure	[psi]	7 500	9 000	15 000	22 500
Burst pressure ≥	[psi]	10 000	12 000	20 000	30 000

Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 10 … 30 V_{DC} [1]
Ex-protection	2-wire: 4 ... 20 mA / V_S = 14 ... 28 V_{DC} [1]
In preparation (only possible with MIL- / Bendix-connector)	3-wire: 0 ... 5 V / V_S = 14 ... 30 V_{DC} 4-wire: 3 mV/V / V_S = 6 ... 10 V_{DC}
[1] *valid for temperature from -40 ... 85 °C; for higher temperatures the supply has to be limited*	
Performance	
Accuracy	IEC 60770: ≤ ± 0.5 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S – V_{S\ min}) / 0.02\ A]\ \Omega$ voltage 3-wire: $R_{min} \geq 10\ k\Omega$ voltage 4-wire: $R_{min} \geq 100\ k\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.5 % FSO per 6 months
Response time	≤ ± 1.5 msec
Thermal effects (Offset and Span)	
Thermal errors	≤ ± 2 % FSO / 100 K in compensated range -5 … 60 °C
Permissible temperatures	
Permissible temperatures	medium / environment: -40 ... 125 °C storage: -55 ... 125 °C
Calibration	
Calibration signal accuracy	≤ ± 0.2 % FSO
Calibration signal	80 % FSO (16.8 mA)
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Mechanical stability	
Vibration	20g, 25 Hz … 2 kHz according to DIN EN 60068-2-6 7.5 g_{RMS}, 5 Hz – 1 kHz according to DIN EN 60068-2-64
Shock	500 g / 1 msec according to DIN EN 60068-2-27
Free Fall	1 m (free fall base: steel) according to DIN EN 60068-2-32
Materials	
Pressure port / diaphragm	standard: stainless steel 1.4548 (316L) on request: Inconel X750® Inconel X718®
Housing	stainless steel 1.4404 (316L)
Media wetted parts	pressure port
Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approval DX18 HU300	**IBExU08ATEX1127 X** zone 0/1: II 1/2 G Ex ia IIC T4 Ga/Gb
Safety technical maximum values	U_i = 28 V, I_i = 100 mA, P_i = 700 mW, C_i = 1 nF, L_i = 5 µH, The supply connections have an inner capacity of max. 27 nF opposite the housing.
Permissible temperatures for medium	-40 ... 70 °C
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1: -25 ... 70 °C

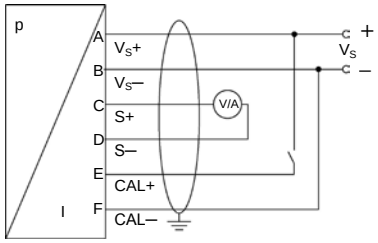
Miscellaneous		
Connecting cables (by factory)	cable capacitance: cable inductance:	signal line/shield also signal line/signal line: 150 pF/m signal line/shield also signal line/signal line: 1 µH/m
Current consumption	2-wire signal output current: 3-wire signal output voltage: 4-wire signal output voltage:	max. 50 mA approx. 15 mA 29 mA @ 10 V
Installation position	any	
Weight	2.1 kg	

Wiring diagrams

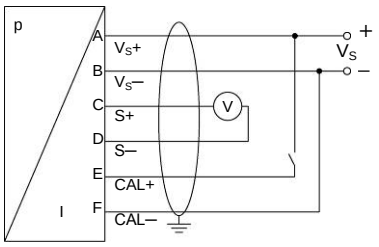
2-wire



3-wire



4-wire

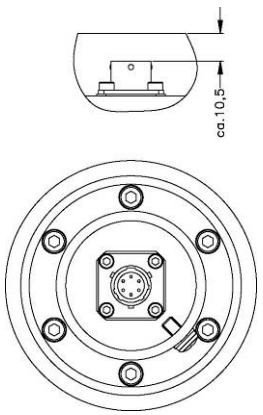


Pin configuration

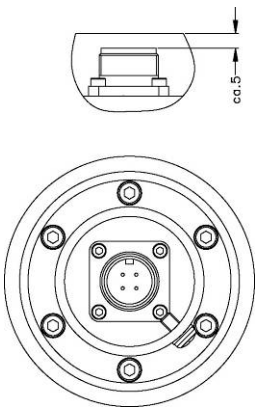
Electrical connection	MIL-/ Bendix (6-pin)	Glenair (4-pin)	cable colours (DIN 47100)
Supply +	pin A	pin C	wh (white)
Supply –	pin B	pin B	bn (brown)
Calibration +	pin E	pin D	pk (pink)
Calibration –	pin F	pin A	gy (grey)
for 3-wire / 4-wire:			
Signal +	pin C	-	-
Signal –	pin D	-	-
Shield	cable shield / for 2-wire: pin D	plug housing	ye/gn (yellow / green)

Electrical connections (dimensions in mm)

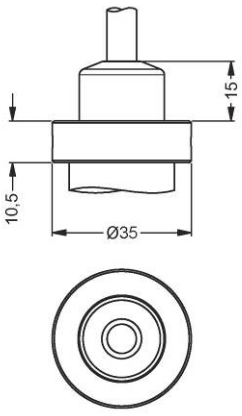
standard **on request**



MIL-/ Bendix (6-pin)
PT02_E10-6P-023
(IP 67)



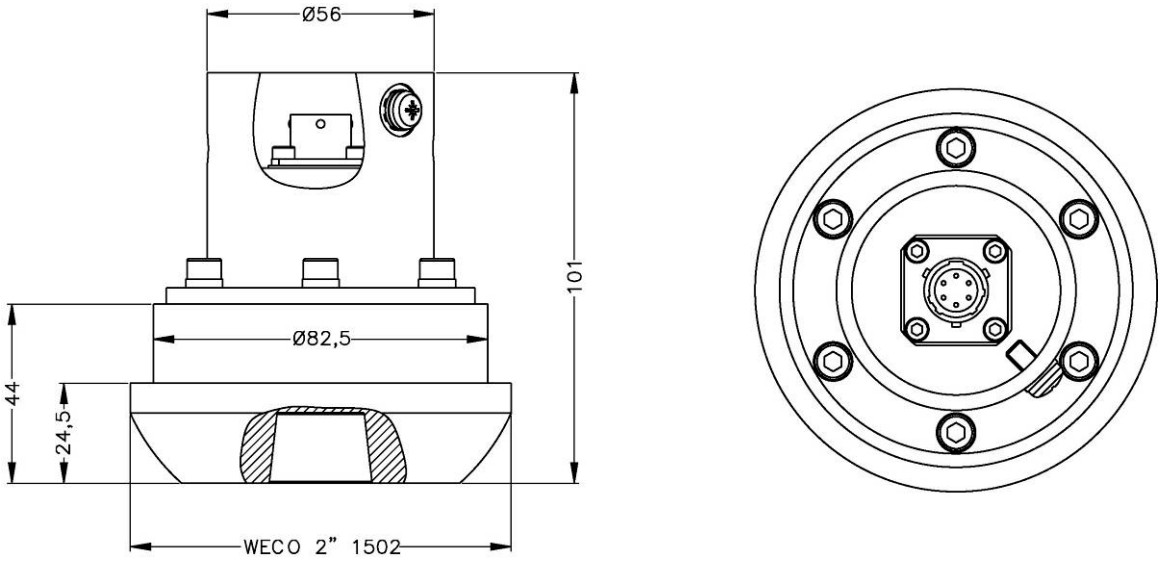
Glenair (4-pin)
GC379-2-14S-2P
(IP 65)



cable outlet
(IP 68)

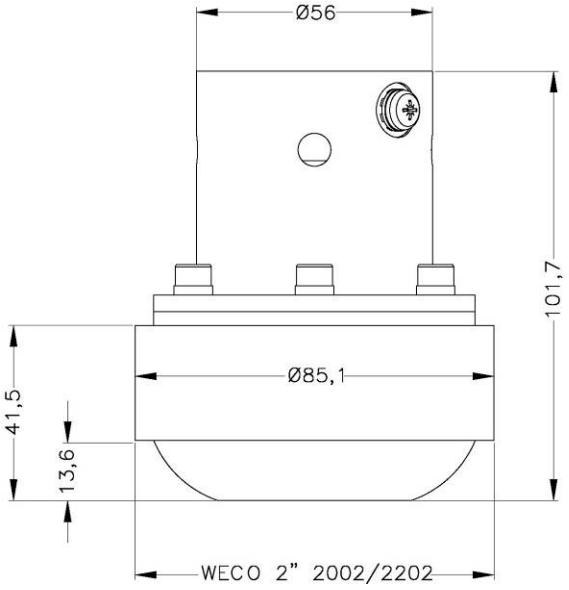
Mechanical connection (dimensions in mm)

standard

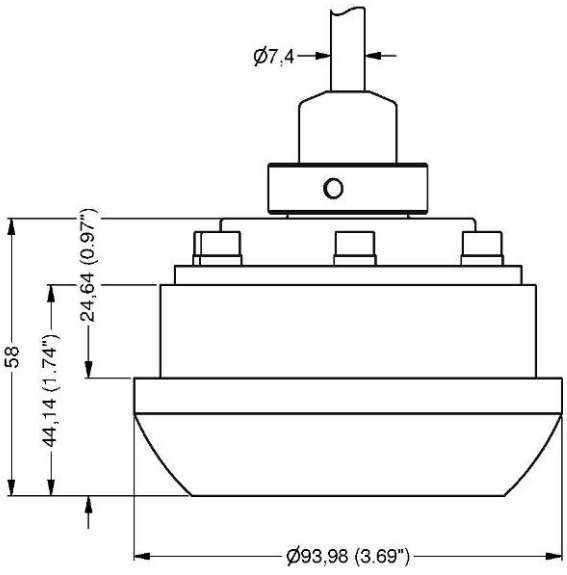


WECO® 2" (1502)

on request



WECO® 2" (2002/2202)



cable outlet

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Ordering code HU 300

HU 300 □□□-□□□□-□-□-□□□-□□□-□□-□□-□□□

Standard version																									
	H	U	0																						
Input	**[psi]**																								
5 000				P	5	K	0																		
6 000				P	6	K	0																		
10 000				P	1	0	K																		
15 000				P	1	5	K																		
customer				9	9	9	9																		consult
Output																									
4 … 20 mA / 2-wire								1																	
Intrinsic safety 4 … 20 mA / 2-wire								E																	
0 ... 5 V / 3-wire								4																	in preparation
3 mV/V / 4-wire								V3																	in preparation
customer								9																	consult
Accuracy																									
0.5 %									5																
customer									9																consult
Electrical connection [1]																									
MIL-/ Bendix (6-pin) type PT02_E10-6P-023										B	2	0													
Glenair (4-pin) GC379-2-14S-2P										B	Z	0													
Cable outlet IP 68 with FEP cable										T	R	2													
customer										9	9	9													consult
Mechanical connection																									
WECO 2" 1502													H	U	0										
WECO 2" 2002/2202													H	U	1										consult
customer													9	9	9										consult
Material pressure port																									
Stainless steel 1.4548 (17-4PH)																7	8								
customer																9	9								consult
Material diaphragm																									
Stainless steel 1.4548 (17-4PH)																		Z	8						
customer																		9	9						consult
Special version																									
standard																				0	0	0			
customer																				9	9	9			consult

[1] only male plugs

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Measurement Instrumentation Products

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